

MONTANA DEPARTMENT OF FISH & GAME  
FEDERAL AID IN FISH RESTORATION SECTION  
HELENA, MONTANA

JOB COMPLETION REPORT  
INVESTIGATIONS PROJECTS

State of Montana

Project No. F7R8

Name Northwest Montana Fishery Study

Job No. III

Title The Relationships of Cutthroat Trout  
and Yellow Perch in Lower Thompson Lake

Period Covered: May 1, 1958 to March 30, 1959

**Abstract:** Eighteen overnight gill net sets were made in each lake at four different sampling periods with about a three month interval between each sampling period. No toxicant was used in either lake. There was no indication of a build up of the planted cutthroat trout. Chief species of fish caught were kokanee and brook trout, neither of which are being planted.

**Objectives:** The relationship of yellow perch and cutthroat trout has been studied in 1952 and 1953 in Middle Thompson and Lower Thompson Lakes in order to determine any weak link in the life cycle of the perch. The cost of complete removal of yellow perch in these lakes would be prohibitive at the present time. During the study it was found that perch fry could be effectively killed with rotenone while in schools along the shore. The entire shoreline of Lower Thompson Lake was treated with "Fish-Tox" from 1954 through 1957 when the yellow perch fry were congregated in large schools. Later in the summer, both Middle and Lower Thompson Lakes were planted with cutthroat fry at about 300 per surface acre. According to observations and gill net sets made since the partial poisoning took place, there are definitely fewer yellow perch in Lower Thompson than in Middle Thompson Lake. The overall objective is to determine the most economical method to develop a fishery in a lake that has a stunted yellow perch population.

**Techniques Used:** Cutthroat trout fry were scatter planted in both lakes. On July 23, 1958, 180,218 cutthroat trout fry were planted in Middle Thompson Lake and on July 24th 120,006 were planted in Lower Thompson Lake.

Eighteen overnight gill net sets were made in each lake in May, August, December of 1958 and February of 1959. Gill nets used were 125 feet long, 6 feet deep and each contained 25 feet of the sizes  $\frac{3}{4}$ , 1,  $1\frac{1}{4}$ ,  $1\frac{1}{2}$  and 2 inch for measure.

It was recommended in the last completion report that no toxicant be applied during the summer of 1958 to test the effectiveness of planting fish without chemical treatment. Therefore no toxicant was used in Lower Thompson Lake during the report period.

Findings: A description of the area and studies made are reported in previous completion reports.

The spring run-off was about the same as the previous year in that extreme high water did not occur as in 1956.

During the gill netting operations, the following species of fish were captured:

Brook trout - Salvelinus fortinalis  
 Coarse-scaled sucker - Catostomus macrocheilus  
 Cutthroat trout - Salmo clarkii  
 Kokanee - Oncorhynchus nerka kennerlyi  
 Large mouth black bass - Micropterus salmoides  
 Longnose sucker - Catostomus catostomus  
 Mountain whitefish - Prosopium williamsoni  
 Pumpkinseed sunfish - Lepomis gibbosus  
 Squawfish - Ptychocheilus oregonensis  
 Yellow perch - Perca flavescens

From May 15th to 17th, 18 overnight gill net sets were made in each lake. (Table I & II). The sets were made around the shores of the lake as close as possible to locations where they were set in previous years.

TABLE I  
 The Number and Weights of the Various Fish Captured in Lower Thompson Lake During the Four Sampling Periods.

Species	May 1958		August 1958		December 1958		Feb. 1959	
	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.
Brook trout	59	18.74	40	22.92	49	24.32	24	13.55
Coarse scale sucker	26	41.44	10	5.46	2	2.51	6	3.46
Cutthroat trout			2	.64	22	21.19	1	.42
Kokanee					35	27.31		
Large mouth black bass			49	20.78				
Long nose sucker	42	70.49	2	.72	14	6.60	11	4.39
Mountain whitefish	2	1.22	1	.12	25	11.97		
Pumpkinseed sunfish	38	6.47	54	11.20	3	.63	14	2.37
Squawfish	63	57.09	26	15.60	10	4.49	4	1.42
Yellow perch	738	146.54	491	158.82	9	2.54	6	1.25
Total	968	341.99	675	236.26	169	101.56	67	27.32

TABLE II

The Number and Weights of the Various Fish Captured in Middle Thompson Lake During the Four Sampling Periods.

Species	May 1958		August 1958		Dec. 1958		Feb. 1959	
	No.	Wt.	No.	Wt.	No.	Wt.	No.	Wt.
Brook Trout	14	4.06	5	1.36	1	.20	3	2.24
Coarse-scaled sucker	66	102.61	45	59.08	42	29.08	18	33.51
Cutthroat trout	3	2.48	1	.54	2	1.30		
Kokanee	4	1.87	141	9.18	92	70.97	1	.62
Large Mouth Black Bass			18	6.36	1	1.34		
Long nose sucker	21	20.58	33	43.89	30	50.44		
Mountain whitefish	18	8.83	162	79.68	111	7.81	2	1.04
Pumpkinseed sunfish	219	29.48	58	5.61	9	1.47	23	3.81
Squawfish	47	32.59	30	30.84	18	7.68	2	2.02
Yellow Perch	1828	187.12	750	95.13	468	92.27	286	54.31
Totals	2,220	389.62	1243	361.67	775	353.91	335	97.55

In August and December, 18 overnight sets were made in each lake, using the same approximate locations as in May. However, in February, when nets were set under 14 inches of ice, the sets were more or less concentrated in one area due to accessibility.

More yellow perch were caught in Middle Thompson Lake during the four sampling periods than were caught in Lower Thompson Lake. More were caught in May in both lakes than the other sampling periods, probably due to spawning activity. Very few cutthroat trout were caught in either lake.

Recommendations: Although no toxicant was used in Lower Thompson Lake during the report period, the numbers of yellow perch caught declined from the first netting in May to the last sampling period in February. Large numbers were captured during May due to spawning activity of fish in shallow waters. Less perch were caught in August, probably due to scattered population of perch throughout the lake and lake water is much warmer. Less perch were caught in December and February due to cold water and reduced activity of the fish.

As was recommended last year, this job is being terminated. Since there was not a practical way to install a barrier in Lower Thompson Lake, there was always a movement of perch into this lake each spring from Middle Thompson Lake.

Planting of trout was unsuccessful in either lake, therefore it is recommended that no fry of any species be planted in these lakes. The chief species of game fish caught in these lakes are brook trout and kokanee. Neither are being planted.

It is recommended that no fish be planted in these lakes at this time. If

at some future date when the "Management and Planting Policy" is changed, large sized fish might produce some fishing. However, this is not recommended at this time.

Prepared by Frank A. Stefanich Approved by George D. Holter  
Date \_\_\_\_\_